## § 1.2

nonparticipating pilots of the potential danger. A warning area may be located over domestic or international waters or both.

Winglet or tip fin means an out-ofplane surface extending from a lifting surface. The surface may or may not have control surfaces.

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EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §1.1, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

## § 1.2 Abbreviations and symbols.

In Subchapters A through K of this chapter:

AGL means above ground level.

ALS means approach light system.

ASR means airport surveillance radar.

ATC means air traffic control.

CAS means calibrated airspeed.

CAT II means Category II.

CONSOL or CONSOLAN means a kind of low or medium frequency long range navigational aid.

DH means decision height.

*DME* means distance measuring equipment compatible with TACAN.

*EAS* means equivalent airspeed.

FAA means Federal Aviation Administration.

FM means fan marker.

GS means glide slope.

*HIRL* means high-intensity runway light system.

IAS means indicated airspeed.

*ICAO* means International Civil Aviation Organization.

*IFR* means instrument flight rules.

*ILS* means instrument landing system.

IM means ILS inner marker.

INT means intersection.

 $\ensuremath{\textit{LDA}}$  means localizer-type directional aid.

*LFR* means low-frequency radio range.

*LMM* means compass locator at middle marker.

LOC means ILS localizer.

*LOM* means compass locator at outer marker.

M means mach number.

 $\it MAA$  means maximum authorized IFR altitude.

*MALS* means medium intensity approach light system.

*MALSR* means medium intensity approach light system with runway alignment indicator lights.

*MCA* means minimum crossing altitude.

*MDA* means minimum descent altitude.

MEA means minimum en route IFR altitude.

MM means ILS middle marker.

MOCA means minimum obstruction clearance altitude.

MRA means minimum reception altitude.

MSL means mean sea level.

NDB(ADF) means nondirectional beacon (automatic direction finder).

NOPT means no procedure turn required.

OEI means one engine inoperative.

OM means ILS outer marker.

*PAR* means precision approach radar. *RAIL* means runway alignment indicator light system.

RBN means radio beacon.

RCLM means runway centerline marking.

RCLS means runway centerline light system.

*REIL* means runway end identification lights.

'RR' means low or medium frequency radio range station.

RVR means runway visual range as measured in the touchdown zone area.

SALS means short approach light system.

SSALS means simplified short approach light system.

SSALSR means simplified short approach light system with runway alignment indicator lights.

TACAN means ultra-high frequency tactical air navigational aid.

*TAS* means true airspeed.

*TCAS* means a traffic alert and collision avoidance system.

TDZL means touchdown zone lights.

TVOR means very high frequency terminal omnirange station.

 $V_A$  means design maneuvering speed.  $V_B$  means design speed for maximum gust intensity.

 $V_C$  means design cruising speed.

 $V_D$  means design diving speed.

 $V_{DF}/M_{DF}$  means demonstrated flight diving speed.

 $V_{EF}$  means the speed at which the critical engine is assumed to fail during takeoff.

 $V_F$  means design flap speed.

 $V_{FO}M_{FC}$  means maximum speed for stability characteristics.

 $V_{FE}$  means maximum flap extended speed.

 $V_{FTO}$  means final takeoff speed.

 $V_H$  means maximum speed in level flight with maximum continuous power.

 $V_{LE}$  means maximum landing gear extended speed.

 $V_{LO}$  means maximum landing gear operating speed.

 $V_{LOF}$  means lift-off speed.

 $V_{MC}$  means minimum control speed with the critical engine inoperative.

 $V_{MO}/M_{MO}$  means maximum operating limit speed.

 $V_{MU}$  means minimum unstick speed.  $V_{NE}$  means never-exceed speed.

 $V_{NO}$  means maximum structural cruising speed.

 $V_R$  means rotation speed.

 $V_{REF}$  means reference landing speed.

 $V_S$  means the stalling speed or the minimum steady flight speed at which the airplane is controllable.

 $V_{S0}$  means the stalling speed or the minimum steady flight speed in the landing configuration.

 $V_{S1}$  means the stalling speed or the minimum steady flight speed obtained in a specific configuration.

 $V_{SR}$  means reference stall speed.

 $V_{SRO}$  means reference stall speed in the landing configuration.

 $V_{SR1}$  means reference stall speed in a specific configuration.

 $V_{SW}$  means speed at which onset of natural or artificial stall warning oc-

 $V_{\textit{TOSS}}$  means takeoff safety speed for Category A rotorcraft.

 $V_X$  means speed for best angle of climb.

 $V_{Y}$  means speed for best rate of climb.

 $V_I$  means the maximum speed in the takeoff at which the pilot must take the first action (e.g., apply brakes, re-

duce thrust, deploy speed brakes) to stop the airplane within the accelerate-stop distance.  $V_{\rm I}$  also means the minimum speed in the takeoff, following a failure of the critical engine at  $V_{\rm EF}$ , at which the pilot can continue the takeoff and achieve the required height above the takeoff surface within the takeoff distance.

 $V_2$  means takeoff safety speed.

 $V_{2min}$  means minimum takeoff safety speed.

VFR means visual flight rules.

VHF means very high frequency.

*VOR* means very high frequency omnirange station.

VORTAC means collocated VOR and TACAN.

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EDITORIAL NOTE: For FEDERAL REGISTER citations affecting §1.2, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.

## § 1.3 Rules of construction.

- (a) In Subchapters A through K of this chapter, unless the context requires otherwise:
- (1) Words importing the singular include the plural;
- (2) Words importing the plural include the singular; and
- (3) Words importing the masculine gender include the feminine.
- (b) In Subchapters A through K of this chapter, the word:
- (1) Shall is used in an imperative sense:
- (2) May is used in a permissive sense to state authority or permission to do the act prescribed, and the words "no person may \* \* \*" or "a person may not \* \* \*" mean that no person is required, authorized, or permitted to do the act prescribed; and
- (3) *Includes* means "includes but is not limited to".

[Doc. No. 1150, 27 FR 4590, May 15, 1962, as amended by Amdt. 1-10, 31 FR 5055, Mar. 29, 1966]